

Strawman ISIM InSb Camera Filter Complement  
 Greenhouse: 04/08/98

**Table 1: ISIM Camera Filters for Strawman Science Program**

Science	Beam Line Elements	$\lambda$ ( $\mu\text{m}$ )	$\lambda/\Delta\lambda$
Cosmic Distances (core)			
Temporal SN survey	SP1	3.0	1.5
Temporal SN follow up	SP1	3.0	1.5
SN spectroscopy	TBP1[1, 2, 3, 4] + FBP1-7	0.6 – 1.8 tunable	50, 100, 150, 200 selectable
SN spectroscopy	TBP2[1, 2, 3, 4] + FBP7-9	1.8 – 3.0 tunable	50, 100, 150, 200 selectable
SN spectroscopy	TBP3[1, 2, 3, 4] + FBP9-10	3.0 – 4.1 tunable	50, 100, 150, 200 selectable
SN spectroscopy	TBP4[1, 2, 3, 4] + FBP10-11	4.1 – 5.3 tunable	50, 100, 150, 200 selectable
Cosmic Distances			
Gravitational lensing	FBP1-11	0.6 – 5.3	5
Universe at $Z > 2$ (core)			
Primordial galaxies deep	SP2-5	0.82, 1.43, 2.48, 4.30	2
Primordial galaxies shallow	FBP1-8	0.6 – 2.9	5
Birth of quasars	TBP1[1, 2, 3, 4] + FBP1-7	0.6 – 1.8 tunable	50, 100, 150, 200 selectable
Birth of quasars	TBP2[1, 2, 3, 4] + FBP7-9	1.8 – 3.0 tunable	50, 100, 150, 200 selectable
Birth of quasars	TBP3[1, 2, 3, 4] + FBP9-10	3.0 – 4.1 tunable	50, 100, 150, 200 selectable
Birth of quasars	TBP4[1, 2, 3, 4] + FBP10-11	4.1 – 5.3 tunable	50, 100, 150, 200 selectable
Primeval spheroids	FBP1-11	0.6 – 5.3	5
Evolution of disks	FBP1-11	0.6 – 5.3	5
Early evol of galaxies	FBP1-11	0.6 – 5.3	5
Stellar Population			
Local group	FBP1-11	0.6 – 5.3	5
Local group	TBP2[1, 2, 3, 4] + FBP7-9	1.8 – 3.0 tunable	50, 100, 150, 200 selectable
Virgo cluster	FBP1-11	0.6 – 5.3	5
Virgo cluster	TBP2[1, 2, 3, 4] + FBP7-9	1.8 – 3.0 tunable	50, 100, 150, 200 selectable
Solar System			
Planets & asteroids	FBP1-11	0.6 – 5.3	5
Planets & asteroids	TBP1[1, 2, 3, 4] + FBP1-7	0.6 – 1.8 tunable	50, 100, 150, 200 selectable
Planets & asteroids	TBP2[1, 2, 3, 4] + FBP7-9	1.8 – 3.0 tunable	50, 100, 150, 200 selectable
Planets & asteroids	TBP3[1, 2, 3, 4] + FBP9-10	3.0 – 4.1 tunable	50, 100, 150, 200 selectable
Planets & asteroids	TBP4[1, 2, 3, 4] + FBP10-11	4.1 – 5.3 tunable	50, 100, 150, 200 selectable
Kuiper Belt survey (KBS)	FBP1-11	0.6 – 5.3	5
KBS follow up	FBP1-11	0.6 – 5.3	5
KBS follow up	TBP1[1, 2, 3, 4] + FBP1-7	0.6 – 1.8 tunable	50, 100, 150, 200 selectable
KBS follow up	TBP2[1, 2, 3, 4] + FBP7-9	1.8 – 3.0 tunable	50, 100, 150, 200 selectable
KBS follow up	TBP3[1, 2, 3, 4] + FBP9-10	3.0 – 4.1 tunable	50, 100, 150, 200 selectable
KBS follow up	TBP4[1, 2, 3, 4] + FBP10-11	4.1 – 5.3 tunable	50, 100, 150, 200 selectable

Notes:

FBP1 = fixed band pass filter number 1 (see Table 2)

SP1 = special purpose filter number 1 (see Table 2)

TBF1[n] = tunable band pass filter number 1 in order n ( $\lambda/\Delta\lambda$  = finesse x order, see Table 3)

**Table 2: ISIM Camera Filters**

Fixed Band Pass Filters	Center Wavelength (mm)	FWHM	I/DL	Camera Channel	Note
FBP1	0.67	0.14	5	1	
FBP2	0.82	0.17	5	1	
FBP3	1.01	0.21	5	2	
FBP4	1.24	0.26	5	2	
FBP5	1.53	0.32	5	2	
FBP6	1.88	0.39	5	3	
FBP7	2.32	0.48	5	3	
FBP8	2.85	0.59	5	3	
FBP9	3.50	0.72	5	4	
FBP10	4.31	0.89	5	4	
FBP11	4.80	1.0	5	4	
<b>Special Purpose Science Filters</b>					
SP1	3.00	2.00	1.5	1, 2, 3, 4	Temporal SN survey
SP2	0.82	0.14	2	1, 2, 3, 4	Very Deep Field
SP3	1.43	0.72	2	1, 2, 3, 4	Very Deep Field
SP4	2.48	1.24	2	1, 2, 3, 4	Very Deep Field
SP5	4.30	2.07	2	1, 2, 3, 4	Very Deep Field
SP6	0.6 long pass			2	Grating order sorter
SP7	1.8 long pass			3	Grating order sorter
<b>Engineering Filters</b>					
E1	Beam Stop	--	--	1, 2, 3, 4	Dark Current
E2	Grism			1, 2, 3, 4	M1 phase capture

**Table 3: ISIM Camera Tunable Band Pass Filters**

	Total Finesse	Operating Wavelength Range (mm)	Accessible Orders	Camera Channel
TBP1	50	0.6 – 1.04	1 - 4	1
TBP2	50	1.04 – 1.79	1 - 4	2
TBP3	50	1.79 – 3.08	1 - 4	3
TBP4	50	3.08 – 5.32	1 - 4	4

**Table 4: ISIM Camera Detector Optimization (mm)**

Channel 1	Channel 2
0.6 – 1.0	1.0 – 1.8

**Table 5: Minimum Filter Wheel Capacity**

Channel	Positions
1	10